

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A metal golf club head, comprising:
a ball hitting face made of a metal, which includes a central portion
and a peripheral portion surrounding at least a part of said central portion,
the face member is subjected to a heat treatment process, including
an aging treatment, prior to a welding process, in which the other members of the
golf club head are welded to the face member,

wherein the hardness of the metal at said peripheral portion is lower
than the hardness of the metal at said central portion.

2. (Currently Amended) A metal golf club head, comprising:
a face member forming a ball hitting face, said ball hitting face
including a central portion and a peripheral portion surrounding at least a part of
said central portion,

wherein said golf club head is manufactured by a method comprising
the steps of:

forming said face member from a raw material separately from other
members used for said golf club head; and

subsequently welding said other members to said face member at a
periphery of said face member, and

the face member is subjected to a heat treatment process, including
an aging treatment, prior to a welding process, in which the other members of the
golf club head are welded to the face member, and

the hardness of the metal at said peripheral portion is smaller than
the hardness of the metal at said central portion.

3. (Previously Presented) A golf club head according to claim 1, wherein

the width of said peripheral portion of said hitting face is in a range between about 5 and 20 mm, the width of said peripheral portion being determined by:

measuring a hardness distribution of said hitting face from an arbitrary point A on the edge of said hitting face, passing through the center of said hitting face, to a point B on the opposite edge of said hitting face;

determining the hardness of said central portion by taking an average of the hardness measured in an area in the vicinity of the center of said hitting face where the difference in hardness in the area is in the range of $\pm 5\%$;

determining the hardness of said peripheral portion in the vicinity of the point A by taking an average of the hardness measured in an area in the vicinity of the point A where the difference in hardness in the area is in the range of $\pm 5\%$;

determining a point of measurement having a value of hardness closest to a mean value between the hardness of said central portion and the hardness of said peripheral portion; and

determining the width of said peripheral portion as a distance between the point A and the point of measurement.

4. (Previously Presented) A golf club head according to claim 2, wherein

the width of said peripheral portion of said hitting face is in the range between about 5 and 20 mm, the width of said peripheral portion being determined by:

measuring a hardness distribution of said hitting face from an arbitrary point A on the edge of said hitting face, passing through the center of said hitting face, to a point B on the opposite edge of said hitting face;

determining the hardness of said central portion by taking an average of the hardness measured in an area in the vicinity of the center of said hitting face where the difference in hardness in the area is in the range of $\pm 5\%$;

determining the hardness of said peripheral portion in the vicinity of the point A by taking an average of the hardness measured in an area in the vicinity of the point A where the difference in hardness in the area is in the range of $\pm 5\%$;

determining a point of measurement having a value of the hardness closest to a mean value between the hardness of said central portion and the hardness of said peripheral portion; and

determining the width of said peripheral portion which is a distance between the point A and the point of measurement.

5. (Original) A golf club head according to claim 1, wherein the difference in the hardness between said central portion and said peripheral portion is equal to or greater than 50 in terms of the Vickers hardness, the hardness of said central portion and of said peripheral portion being determined by:

measuring a hardness distribution of said hitting face from an arbitrary point A on the edge of said hitting face, passing through the center of said hitting face, to a point B on the opposite edge of said hitting face;

determining the hardness of said central portion by taking an average of the hardness measured in an area in the vicinity of the center of said

hitting face where the difference in hardness in the area is in the range of $\pm 5\%$;
and

determining the hardness of said peripheral portion in the vicinity of the point A by taking an average of the hardness measured in an area in the vicinity of the point A where the difference in hardness in the area is in the range of $\pm 5\%$.

6. (Original) A golf club head according to claim 2, wherein the difference in the hardness between said central portion and said peripheral portion is equal to or greater than 50 in terms of the Vickers hardness, the hardness of said central portion and of said peripheral portion being determined by:

measuring a hardness distribution of said hitting face from an arbitrary point A on the edge of said hitting face, passing through the center of said hitting face, to a point B on the opposite edge of said hitting face;

determining the hardness of said central portion by taking an average of the hardness measured in an area in the vicinity of the center of said hitting face where the difference in hardness in the area is in the range of $\pm 5\%$;
and

determining the hardness of said peripheral portion in the vicinity of the point A by taking an average of the hardness measured in an area in the vicinity of the point A where the difference in hardness in the area is in the range of $\pm 5\%$.

Claim 7. (Original) A golf club head according to claim 3, wherein the difference in the hardness between said central portion and said peripheral portion is equal to or greater than 50 in terms of the Vickers hardness,

the hardness of said central portion and of said peripheral portion being determined by:

measuring a hardness distribution of said hitting face from an arbitrary point A on the edge of said hitting face, passing through the center of said hitting face, to a point B on the opposite edge of said hitting face;

determining the hardness of said central portion by taking an average of the hardness measured in an area in the vicinity of the center of said hitting face where the difference in hardness in the area is in the range of $\pm 5\%$; and

determining the hardness of said peripheral portion in the vicinity of the point A by taking an average of the hardness measured in an area in the vicinity of the point A where the difference in hardness in the area is in the range of $\pm 5\%$.

8. (Withdrawn) A method for producing a metallic golf club head, comprising the steps of:

forming a face member, a sole member, a crown member, and a hosel member using a metal;

increasing a hardness of the face member by subjecting only the face member to a first heat treatment, and

welding the face member subjected to the first heat treatment to the sole member, the crown member, and the hosel member, and subjecting a periphery portion of the face member to a second heat treatment using heat for welding the face member so that a hardness of the periphery portion of the face member becomes lower than a hardness of a central portion of the face member.

9. (Withdrawn) The method according to claim 8, wherein the face member is made of a titanium alloy.

10. (Withdrawn) The method according to claim 8, wherein a solution treatment and a subsequent aging treatment, or only an aging treatment is carried out in the first heat treatment.

11. (Withdrawn) The method according to claim 10, wherein the solution treatment is carried out at 700-900°C for 4-6 minutes, and the aging treatment is carried out at 400-600°C for 5-10 hours.

12. (Withdrawn) The method according to claim 8, wherein the welding is carried out in an argon atmosphere using a welding current of about 30-90Å.

13. (Previously Presented) The golf club head according to claim 1, wherein said ball hitting face is subjected to an aging process before welding said face member to other members used for said golf club head.

14. (Previously Presented) The ball hitting face according to claim 1, wherein said ball hitting face is made of titanium alloy.

15. (Previously Presented) The ball hitting face according to claim 1, wherein said ball hitting face is made from a metal whose strength is increased by being subjected to heating, and when said metal is welded whose strength of the welded portion is decreased.

16. (Previously Presented) The golf club head according to claim 2, wherein said face member is subjected to an aging process before said face member is welded to said other members.

17. (Previously Presented) The face member according to claim 2, wherein said face member is made of titanium alloy.

18. (Previously Presented) The golf club head according to claim 3, wherein said face member is made from a metal whose strength is increased by being subjected to an aging process, and when said metal is welded whose strength of the welded portion is decreased.